

THREE NEW SPECIES OF OLIGOCHAETA (NAIDIDAE)
FROM THE SOUTHEASTERN U.S.

Walter J. Harman

The oligochaete fauna of the United States has received much attention in recent years from those interested in the macro- and microfauna of both the lentic and lotic habitats. The number of undescribed species and the poorly documented distribution of others make it difficult for the non-specialist to work with these animals. In order for three undescribed species to become part of the literature, and so they can be incorporated into the keys for identification, it is deemed prudent to describe these additions to the naidid fauna. One of the species is likely to have a wide distribution over the southeastern states, and the other two are each known only from one locality in Louisiana. It is hoped that this addition will ease the plight of the worker whose primary interest is in a related field, as well as the specialist.

Wapsa grandis, new species
Fig. 1

Diagnosis.—No prostomial extension. Body wall papillate. Foreign matter adhering to the cuticle, but occasionally sparse or absent. All setae bifid. Ventrals of II, 6-7 per bundle, longer than the rest (128-148 μ m) with the distal tooth more than twice as long as the proximal (6.0/2.6). Ventrals of III shorter (98-106 μ m) than those of either II or IV, 3 per bundle, with the distal tooth less than twice as long as the proximal (5.0/2.7); most posterior bundles with 3 setae as far back as the budding zone (segments XII or XIII), less than 3 per bundle beyond, 60-106 μ m. Tooth length approaches equality toward the posterior.

Dorsal setae begin in V, 3 bifid crochets per bundle to the budding zone, 2 per bundle in the following segments. Distal tooth in the anterior dorsal bundles 1½ times as long as the proximal (6.0/4.0), becoming nearly equal (4.1/4.0) in the posterior progression. Nodus median in ventral II, slightly proximal in all others; slightly proximal in all dorsals. Stomach in VI with sudden dilation; chlorogogue from V; coelomocytes present.

Etymology.—So named because the setal measurements of this species are larger than any other of its congeners. See Table 1.

Distribution.—Louisiana. Terrebone Parish. 11.7 mi SW of Theriot on LA hwy 315. Holotype: NMNH 53712; 2 paratypes, NMNH 53713. LSU 1801.

Discussion.—*Wapsa* is a genus now containing 3 species, each confined to a separate continental distribution. *Wapsa evelinae* was described (Marcus.

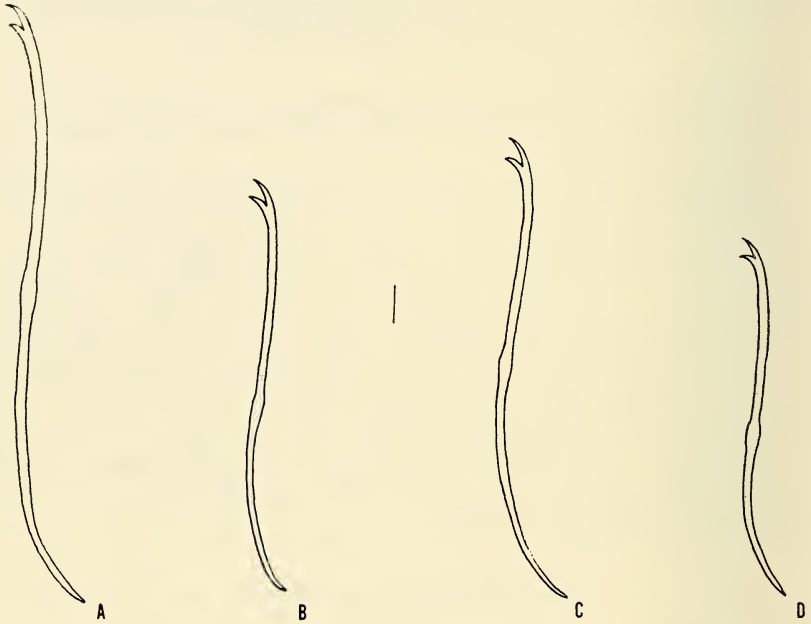


Fig. 1. Setae of *Wapsa grandis* n. sp. A, Anterior ventral; B, Posterior ventral; C, Anterior dorsal; D, Posterior dorsal.

1965) from Brazilian brackish water and *W. mobilis* (Liang, 1958) is from fresh water in China. *Wapsa grandis* is known only from the type-locality in Terrebonne Parish, Louisiana, in a boggy area subject to salt water intrusion. Salinity measured 16‰ at the time of collection.

Even with 3 species now recognized in *Wapsa*, they are clearly separated geographically and their setal lengths show non-overlapping ranges. See Table 1.

No species of *Wapsa* may be considered common. Marcus (1965) found the Brazilian species in only 2 localities. Harman (1974) did not find *Wapsa* in any collection from a thorough survey in Surinam that included several brackish water habitats. Liang's species has been dealt with in the literature on several occasions, but it is not reported from other locations. With over 15 years of collecting aquatic oligochaetes in Louisiana, I have not found this new species in any other locality.

Brinkhurst (1971) discusses the genus, but spells the name *Waspa*, not *Wapsa*. The latter is the spelling of Marcus who described it, and I know of no reason why the spelling should be changed. Brinkhurst further states (p. 321) that *mobilis* “. . . is undoubtedly close to *W. evelinae* and

Table 1. Comparative measurements of 3 species of *Wapsa*.

Species	Ventrals of Segment II	Ventrals of Segment III	Ventrals of Posterior Segments	Dorsals Needles
<i>W. mobilis</i>	94–106 μm	81–88 μm	90–102 μm (V & VIII)	90–94 μm
<i>W. evelinae</i>	65–92 μm	50–70 μm	60–80 μm (IV–VIII)	Not given
<i>W. grandis</i>	128–148 μm	98–106 μm	109–121 μm (IV–VIII)	94–123 μm -Ant. 74–100 μm -Post.

may prove to be no more than a variant of it." I point out that *evelinae* was described in 1965, but that *mobilis* dates from 1958, thus the latter would have priority in case of synonymy. With such clearly non-overlapping ranges of setal lengths, further consideration of synonymy is not warranted at this time.

Wapsa is such a distinctive genus with the dorsals commencing in V and lacking hair setae, that it can be confused with few other taxa, *Paranais* being the most likely prospect. The papillate body wall of *Wapsa* is the most consistent and obvious distinction. Other differences, such as the absence of nephridia in *Paranais*, the penial setae, and clitellum, either require special preparation or are of seasonal occurrence.

Pristina longisoma, new species

Fig. 2

Diagnosis.—No eyes. Prostomium distinct, but not elongate. Dorsal setae beginning in II, 3–4 long unserrated hairs and 2–4 simple-pointed needles with distal portion strongly tapered and sharply pointed. No nodulus on the needles. Hairs in II greatly longer than those in succeeding segments. Ventral setae of II–V, 3 per bundle with a distal nodulus, the distal tooth slightly longer and thinner than the proximal. Posteriorly the setae are shorter, the nodulus distal, and the distal tooth slightly longer and thinner than the proximal.

Reproduction apparently by fragmentation with 5 segments formed in anterior regeneration. Chlorogogue commences in V. Stomachal dilation gradual, in IX–XI. Swims.

Etymology.—The name *longisoma*, long body, is applied as the trivial name because of the relatively long body, uninterrupted by fission zones.

Distribution.—Louisiana: Winn Parish. 6.4 mi NE of Winnfield on LA hwy 34. 14 August 1972. M. L. McMahan. Holotype: NMNH 53656; Paratypes: NMNH 53657. Ascension Parish. Alligator Bayou at LA hwy 928. 4.3 mi E of Parish line. 25 September 1964. W. D. Longest. LSU 1691.

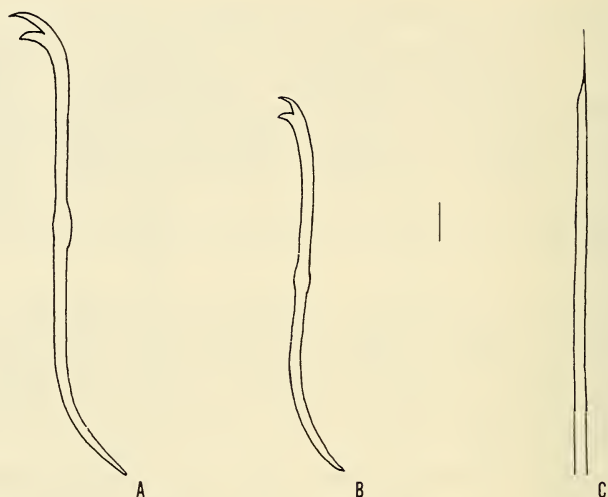


Fig. 2. Setae of *Pristina longisoma* n. sp. A, Anterior ventral; B, Posterior ventral; C, Needle.

Arkansas: Columbia County. 1.7 mi S of Taylor, State Route 32. 22 April 1965. W. J. Harman and H. H. Hobbs, Jr. LSU 1666.

Florida: St. Johns County, small stream at FL hwy 415, 3.5 mi SW of Alamana, 9 September 1975, W. H. Harman and M. S. Loden, LSU 1668.—Polk County, small stream at FL hwy 630A, 4 mi W of Frostproof, 7 September 1975, M. S. Loden, LSU 1669.—Madison County, roadside ditch along I-110, 6.3 mi E of junction of I-110 and US 221, 6 September 1975, W. J. Harman and M. S. Loden, LSU 1670.—Duval County, small stream at I-110, 9.5 mi W of Jacksonville, 9 September 1975, W. J. Harman and M. S. Loden, LSU 1671.—Citrus County, pond along FL hwy 200, 1.3 mi N of Hernando, 6 September 1975, W. J. Harman and M. S. Loden, LSU 1672.—Baker County, pond along US 90, 1.7 mi E of Chambers Cemetery, 9 September 1975, W. J. Harman and M. S. Loden, LSU 1673.—Alachua County, roadside ditch along I-75, 1.8 mi N of junction of I-75 and FL 329, 6 September 1975, W. J. Harman and M. S. Loden, LSU 1674.

Discussion.—The dorsal setal bundles of II consist of 3–4 unserrated hairs up to 1,400 μm long and 2–4 needles 65–90 μm long, the tips of which are much reduced in diameter and simple pointed (see Fig. 2C). In III, the hairs number 2–3, but are less than 400 μm in length. Beginning in IV, hair length is in excess of 400 μm (483–667 μm) increasing in midbody to about 950 μm in XIX, then shorter in the posterior region.

The ventrals of the anterior segments are 3–7 per bundle, 86–124 μm long with a distal nodulus and the distal tooth slightly longer and thinner

than the proximal. Beginning in VI, the ventrals are 2–8 per bundle, 77–98 μm long, with a distal nodulus, and with the distal tooth longer and thinner (see Fig. 2A). In the posterior segments the length is 80–93 μm , and the nodulus is median; the distal tooth is only slightly longer and thinner (see Fig. 2B).

In almost every segment the ventral bundles contain 1 or 2 setae in some stage of formation. This usually consists of the teeth of the seta with some part of the shaft developed. Such constant formation of setae while the number remains at 9 or less, suggests shedding of these setae at a comparable rate.

In one anterior regenerate, the ventral bundles were similar in morphology except thinner and shorter, but the forming setae were of a larger, more typical shape and size.

The number of segments is high, up to 112. In no instance was a specimen sexually mature, although collections were made in April, August, and September; no specimen showed a zone of fission. This suggests fragmentation as a means of asexual reproduction, an unusual, but not unknown, method among Naididae.

The generic placement of this species will need future scrutiny because of the apparent mode of asexual reproduction and the regeneration of only 5 segments anteriorly instead of the 7 that is usual (Sperber, 1948, p. 209). Aside from these characters, the species fits the genus *Pristina*. The new species, for a variety of reasons, is not assignable to either *Stephensoniana* or *Homochaeta*, the only other naidid genera with dorsals beginning in II. I do not see benefit derived from the description of a new genus to be based upon a character not evident in all specimens. Additionally, the new genus could not be in *Pristininae*, to which it otherwise seems so closely allied, because of the number of anteriorly regenerated segments.

Pristina longisoma can be confused with *P. leidy* if the serrated hairs and proboscis of the latter are overlooked, but the long hairs are on different segments and the needles of *leidy* are finely bifid.

Chen's (1944) *Naidium bilongatum* is another species with reproduction by fragmentation and initial long hairs, but these are in III, not II as is the case with *P. longisoma*. Additionally, the needle is distinctive between the 2 species, being simple pointed in *longisoma* and bifid in *bilongatum*. Liang (1964) placed *N. bilongatum* in the genus *Allodero*, otherwise considered as a subgenus by other authors. In doing this, it was necessary to revise the generic description to include the commencement of dorsals in III, not just IV as had been the case. Brinkhurst (1969) declared *N. bilongatum* a *species dubium*, but later (1971) assigned the species to *Allodero* after Liang. We are witnessing by such action the accumulation of bizarre species in *Allodero* as a matter of convenience to the worker.

Since Chen's description is inadequate, type material is unknown, and no further collections have been made, it is probably better to declare *N. bilongatum* Chen, 1944 *incertae sedis* until it has been collected and studied again. The species exists only as a name in the literature and no useful purpose is served by revising a genus just to accommodate a name. *Pristina longisoma* may or may not be related to *N. bilongatum*, but no reason exists for their confusion since the latter has dorsals commencing in III, not II, and the needles are bifid, not simple.

Pristina longisoma was first collected as a single specimen in Louisiana in 1964, and subsequent collections in Arkansas, Louisiana and Florida have provided enough material for the description. The wide distribution in Florida, in 8 counties, from streams, intermittently flowing roadside ditches, and ponds, indicates that it is likely to be well established in a variety of habitats over a large part of the southeastern U.S. Both the Arkansas and the Louisiana collections were made in roadside ditches which carried flowing water after rains.

Dero (Dero) abbranchiata, new species

Fig. 3

Diagnosis.—Dorsal bundles from VI, one thin hair and one spatulate needle with distal nodulus. Ventral setae in II–III 4–5 per bundle, longer, straighter, and thinner than the rest, with the distal tooth $1\frac{1}{2}$ times as long as the proximal; proximal nodulus. Ventrals VI–VIII transitional; the distal tooth becoming shorter (subequal to the proximal), and the length of the entire seta shortening. Beginning in VIII, ventrals are 3–4 per bundle, shorter and thicker than the more anterior setae, with a distal nodulus; the distal tooth shorter and thinner than the proximal.

The caudal fossa well developed but without gills. Chorogogue from VI. Stomachial dilation sudden, in X. Thirty-eight setigerous segments in a nonreproducing specimen. Five segments formed anteriorly following asexual reproduction.

Distribution.—Louisiana: Vernon Parish, 4.7 mi W Leesville, LA hwy 8, pond, R. E. Tandy, 30 April 1966, 6 specimens. Holotype: NMNH 54331. Paratypes: NMNH 54332. LSU 1825.

Discussion.—*Dero abbranchiata* n. sp. is known only from the type-locality in western Louisiana. The habitat is lentic. The species is neither widely distributed nor locally abundant.

The absence of finger-like gills is unique in the subgenus (hence the specific name *abbranchiata*), although few gills are known in the examples of *D. sawayi* and *D. pectinata*, which have 2 pairs of reduced or knob-like gills.

The needle setae of *D. abbranchiata* are also unique in this subgenus. The needles range 47–56 μm long with a distal nodulus. The distinctly bifid

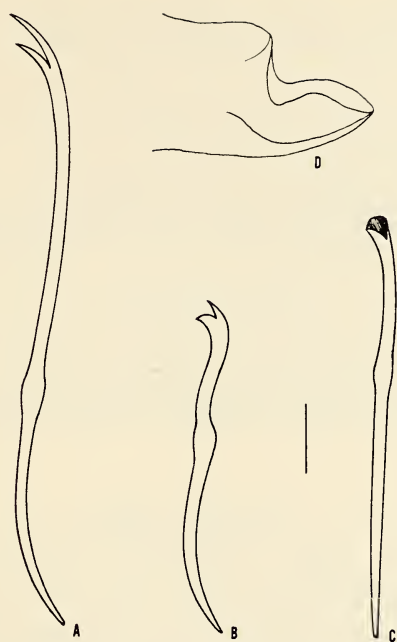


Fig. 3. *Dero (Dero) abranchiata*. A, Anterior ventral seta; B, Posterior ventral seta; C, Needle seta; D, The caudal fossa without gills.

needles have the interdentary space filled by a web with costae, resembling the conditions in *Aulophorus*. The distal tooth of the needle is nearly straight with the axis of the setal shaft, and is thinner than the more curved proximal tooth. The needle is approximately $3\ \mu\text{m}$ thick. The hair setae are thin ($1.5\ \mu\text{m}$) and short, ranging $114\text{--}124\ \mu\text{m}$, without serrations. Ventral setae are of 3 kinds: anterior, transitional, and posterior. Anteriorly (II–V) the length is $85\text{--}105\ \mu\text{m}$ with the distal tooth $1\frac{1}{2}$ times as long as the proximal. In the transitional zone (VI–VIII) the setae are shorter, $65\text{--}79\ \mu\text{m}$, the nodulus is median to slightly distal, and the distal tooth becomes progressively shorter, approaching the length of the proximal. Posterior to VIII, the setae are $59\text{--}67\ \mu\text{m}$ long, the nodulus is distal, and the distal tooth is shorter and thinner than the proximal.

Dero abranchiata appears to be related to *D. asiatica*, *D. sawayi*, *D. magna*, and *D. pectinata*, all of which have gills reduced in number and size. *Dero palmata* is the only congener with a webbed needle, and *D. pectinata*, *D. magna* and *D. evelinae* have one or more intermediate teeth.

Dero abranchiata is distinguishable from *D. palmata* by the shape of the palmate portion of the needle, and by the presence of 3 pairs of gills in the latter.

D. pectinata, *asiatica*, *magna*, and *evelinae* all have intermediate teeth, but the needles of these species lack the continuity of an interdentary web. The general setal measurements of *D. evelinae* and *D. magna* are much larger than the new species, and those of *D. pectinata* and *D. asiatica* are much smaller. Additionally, there are gills in the fossae of all these congeners. The hair setae of *D. pectinata* are also plumose.

Dero abbranchiata appears to be more closely related to an Asian and several South American species than to any of its nearctic congeners.

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Department of Zoology, Louisiana State University, Baton Rouge, Louisiana 70803.